

The Objections to the Claims

The claims stand objected to because of the claim numbering. As noted by the Office Action and MPEP 608.01(n)(IV), in general, Applicant's sequence will not be changed.

Accordingly, Applicant respectfully requests that the objection to the claims be withdrawn.

The Rejection under 35 U.S.C. § 112, Second Paragraph

Claims 1-10 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. During the Interview of March 28, 2003, Applicant's undersigned representative presented the illustration of Attachment A (see attachment provided herewith) and explained that the first and second image pick-up elements each included photosensitive regions. Moreover, the respective fronts and backs are defined in the claims such that the photosensitive regions are closer to the fronts. Accordingly, Applicant respectfully submits that the claims are fully definite and request that the rejection under 35 U.S.C. § 112, second paragraph, be withdrawn.

The Rejection under 35 U.S.C. § 112, First Paragraph

Claim 9 stands rejected under 35 U.S.C. § 112, first paragraph, as allegedly containing subject matter not described in the specification. Applicant respectfully notes that page 13, lines 12-14, of the specification, for example, discloses a substrate having the same material as the second semiconductor image pickup element. Accordingly, Applicant respectfully requests that the rejection under 35 U.S.C. § 112, first paragraph, be withdrawn.

The Rejections under 35 U.S.C. §§ 102(b) and 103(a)

Claims 1-2 and 5-9 stand rejected under 35 U.S.C. § 102(b) as being anticipated by *Jack et al.* (USPN 5,808,350). Claims 3 and 10 stand rejected under 35 U.S.C. § 103(a) as being

obvious over *Jack et al.* (USPN 5,808,350) in view of *Go* (USPN 4,912,545). Applicant traverses the rejections for at least the following reasons.

As discussed during the Interview of March 28, 2003, in accordance with the present application, a first back-illuminated image pickup element receives light image from its back side and its photosensitive region is positioned on the its front side. Thus, the back-illuminated image pickup element is used with its top surface down when being illuminated from above. A second image pickup element has its photosensitive region positioned on the front side. Thus, the fronts of the image pickup elements are secured with each other so that the fronts are closer to each other. That is, the two photosensitive regions of the respective pickup elements are in close proximity to each other. Thus, one can set an image focus plane to be close to both of the photosensitive regions, thereby solving the “image focus distance difference problem” discussed at page 2, lines 9-22, of the present application.

In contrast, with respect to independent claims 1, *Jack et al.*, does not teach or suggest a combination wherein “respective fronts of [the] first back-illuminated semiconductor image pickup element and [the] second semiconductor image pickup element being closer to each other than their respective backs.” The Office Action suggests that the NIR detecting layer 12 of *Jack et al.* is a “first back-illuminated image pickup element” as claimed and that silicon layer 16 of *Jack et al.* is a “second image pickup element” as claimed. Applicant respectfully disagrees. The NIR detecting layer 12 is entirely a photosensitive region, and therefore, does not have a photosensitive region that would be closer to one side rather than another. Moreover, the silicon

layer 16 does not have a photosensitive region therein at all, and therefore, cannot be considered to be a “second image pickup element” as claimed.

Consequently, Applicant respectfully asserts that Figure 1A of *Jack et al.* discloses only one optical pickup element (i.e., imager 10) having NIR detecting layers 12 and buried channel CCD 21 on opposing sides thereof. Thus, these photodetecting elements are separated by the thickness of the silicon layer 16. As a result, the system of *Jack et al.* suffers from the “image focus distance difference problem.”

With respect to independent claim 3, Applicant respectfully asserts that independent claim 3 is allowable for reasons similar to those of independent claim 1.

Applicant respectfully notes that the Office Action does not rely on *Go* to teach or suggest any of the above noted features. Moreover, Applicant respectfully asserts that *Go* cannot remedy any of the above noted deficiencies.

Further, claims 3 and 10 recite that the image pickup elements are adhered via bumps. The Office Action admits that *Jack et al.* does not disclose bumps. Nonetheless, the Examiner asserts that it would be obvious to modify the device of *Jack et al.* to include bumps as disclosed in *Go* because bumps aid in providing an electrical connection among the components. However, Applicant respectfully asserts that the imager 10 of *Jack et al.* is only one component. Therefore, in *Jack et al.*, there are no two components in need of adhering, and there would be no motivation to use bumps.

Accordingly, as set forth above, Applicant respectfully asserts that the rejections under 35 U.S.C. § 103(a) should be withdrawn because the applied art, whether taken singly or

combined, does not teach or suggest each feature of independent claims 1 and 3. Further, Applicant respectfully asserts that dependent claims 2 and 4-10 are allowable at least because of their respective dependence from independent claims 1 and 3, and the reasons set forth above.

Conclusion

In view of the foregoing, Applicant respectfully requests reconsideration and the timely allowance of the now pending claims. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicant's undersigned representative at 202-739-5549 to expedite prosecution.

Attached hereto is a marked-up version of the changes made by the current amendment. The attachment is captioned, "Version with markings to show changes made."

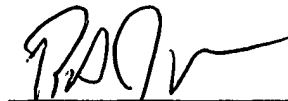
If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0310. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

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Dated: April 2, 2003

By:



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